

What is claimed is:

1. An apparatus for suppressing torque steering in a vehicle having left and right wheels, a left drive shaft coupled to the left wheel via a left outer joint, a right drive shaft coupled to the right wheel via a right outer joint, comprising:
 - a driving source adapted to accelerate a vehicle from an at rest condition to a predetermined rate of acceleration, and adapted to move from a first position when the vehicle is at rest to a second position during the predetermined rate of acceleration; and
 - a structure that connects the driving source to the left drive shaft and the right drive shaft, which structure is positioned relative to the left and right wheel so that the left and right drive shafts each define a first tilt angle when the driving source is in the first position, and a second tilt angle that is smaller than the first tilt angle when the driving source is in the second position.
2. The apparatus of claim 1, wherein the structure is positioned relative to the left and right wheel so that the second tilt angle is zero.
3. The apparatus of claim 2, wherein the predetermined rate of acceleration is taken as the highest acceleration of the vehicle.
4. The apparatus of claim 1, wherein the driving source comprises a laterally set engine having its crankshaft extending in the lateral direction of the vehicle; and wherein the structure further comprises: a differential gear connected to the driving source, which is offset from the center in the vehicle's width direction; a first joint adapted to connect one of the left and right drive shafts to the differential; an intermediate shaft connected to the differential gear; and a second joint adapted to connect the other of the left and right drive shafts to the intermediate shaft.
5. The apparatus of claim 1, where in the structure further comprises a joint adapted to connect to one of the left and right drive shafts; wherein the height of the joint when the vehicle is at rest is lower by a prescribed height than the height of the left and right outer joints.
6. The apparatus of claim 5, wherein the prescribed height is selected in the range of 5-20 mm.

7. The apparatus of claim 5, further comprising auxiliary machinery operatively associated with the driving source, wherein the position of the auxiliary machinery is raised with respect to the engine corresponding to the position of the joint included in the structure.

8. An vehicle, comprising:

- (a) at least one wheel mounted to the vehicle for rotation about a center axis;
- (b) at least one drive shaft coupled to the wheel via an outer joint;
- (c) a driving source; and
- (d) an inner joint that connects the driving source to the drive shaft, the inner joint positioned below the outer joint by a prescribed height so that the drive shaft defines a tilt angle when the vehicle is at rest.

9. The vehicle of claim 8, wherein the prescribed height is selected in the range of 5-20 mm.

10. The vehicle of claim 8, further comprising auxiliary machinery operatively associated with the driving source wherein the position of the auxiliary machinery is raised with respect to the engine corresponding to the position of the inner joint.

11. The vehicle of claim 8, wherein the driving source is adapted to move from a first position when the vehicle is at rest to a second position during a predetermined rate of acceleration, wherein the tilt angle decreases when the driving source moves to the second position during acceleration.

12. The vehicle of claim 11, wherein the predetermined rate of acceleration is taken as the highest acceleration of the vehicle.

13. The vehicle of claim 8, further comprising: a differential gear connected to the driving source, which is offset from the center in the vehicle's width direction; a first joint adapted to connecting one of the left and right drive shafts to the differential gear; an intermediate shaft connected to the differential gear; and a second joint adapted to connect the other of the left and right drive shafts to the intermediate shaft.

14. An apparatus for suppressing torque steering in a vehicle having left and right wheels, a left drive shaft coupled to the left wheel via a left outer joint to define a left tilt angle, a right drive shaft coupled to the right wheel via a right outer joint to define a right tilt angle, comprising:

driving means for accelerating the vehicle; and

coupling means for mechanically connecting the left and right drive shafts to the driving means so that the left and right tilt angles decrease as acceleration of the vehicle increases.

15. The apparatus of claim 14, wherein the coupling means is adapted to decrease the left and right tilt angles when the acceleration reaches a preset acceleration.

16. The apparatus of claim 15, wherein the predetermined rate of acceleration is taken as the highest acceleration of the vehicle.

17. The apparatus of claim 14, wherein the driving means comprises a laterally set engine having its crankshaft extending in the lateral direction of the vehicle; and wherein the coupling means comprises: a differential gear connected to the driving source, which is offset from the center in the vehicle's width direction; a first joint adapted to connect one of the left and right drive shafts to the differential gear; an intermediate shaft connected to the differential gear; and a second joint adapted to connect the other of the left and right drive shafts to the intermediate shaft.

18. The apparatus of claim 14, where in the coupling means further comprises an inner joint adapted to connect to one of the left and right drive shafts; wherein the height of the inner joint when the vehicle is at rest is lower by a prescribed height than the height of the outer joints.

19. The apparatus of claim 18, wherein the prescribed height is selected in the range of 5-20 mm.

20. A power train device for use in a vehicle having at least left and right front wheels and a drive source, comprising:

a differential gear which is connected to the drive source; and
drive shafts which are provided between the left and right front wheels, wherein the drive shafts extend to create tilt angles with respect to the axis between the centers of the right and left wheels when the vehicle is viewed from the front, the drive shafts being coupled to the differential gear in a position to reduce the tilt angles when the vehicle is accelerated as compared to when the vehicle is under its normal running condition.

21. The power train device of claim 20, wherein the drive shafts are positioned so that the tilt angles become zero when the vehicle is accelerated to a prescribed acceleration.

22. The power train device of claim 21, wherein the prescribed acceleration is the maximum acceleration of the aforementioned vehicle.

23. The power train device of claim 20, wherein the differential gear is offset from the center of the vehicle in the width direction, and the right and left drive shafts are adapted to be connected to the right and left wheels at their respective outer ends by via drive shaft wheel-side joints, and connected to the differential gear via drive shaft differential-gear-side joints, and further comprising an intermediate shaft interposed between the differential gear and the drive shaft differential-gear-side joints of at least one of the drive shafts.

24. The power train device of claim 23, wherein the heights of the drive shaft differential-gear-side joints when the vehicle is at a halt are set to be lower than the heights of the drive shaft wheel-side joints by a prescribed vertical distance.

25. The power train device of claim 24, wherein the prescribed vertical distance is set in the range of 5 mm - 20 mm.

26. A vehicle comprising:

- (a) a drive source including a drive-source-side member adapted for connection to a drive shaft;
- (b) wheels rotatably mounted on the sides of the vehicle, including wheel-side members adapted for connection to a drive shaft; and
- (c) drive shafts disposed between the drive source and the wheels and each having a wheel-side connection part connected to the wheel-side members and a drive-source-side connection part connected to the drive-source-side member, wherein the wheel-side connection parts are connected to the wheel side members at vertically-higher positions than the drive-source-side connection part while the vehicle is not accelerating.

27. The vehicle of claim 26, further comprising a steering device connected to the wheels.

28. The vehicle of claim 26, further comprising auxiliary machinery placed at a position higher with respect to the drive source according to the position of the drive-source-side connection part.

29. A method for suppressing torque steering in a vehicle having a driving source, left and right wheels, a left drive shaft coupled to the left wheel via a left outer joint to define a left tilt angle, a right drive shaft coupled to the right wheel via a right outer joint to define a right tilt angle, comprising:

coupling the left and right drive shafts to the driving source via a left and right inner joints;

positioning the left and right inner joints below the left and right outer joints, so that the left and right drive shafts define left and right tilt angles, respectively, with the left and right outer joints; and

when the vehicle is accelerating, allowing the left and right inner joints to move upward with the driving source to decrease the left and right tilt angles.

30. The method of claim 29, wherein when the vehicle is accelerating at a predetermined rate of acceleration, the left and right inner joints are moved upward until the left and right tilt angles are zero.

31. The method of claim 30, wherein the predetermined rate of acceleration is the highest acceleration of the vehicle.

32. The method of claim 29, wherein the left and right inner joints are positioned below the left and right outer joints by a prescribed height.

33. The method of claim 32, wherein the prescribed height is selected in the range of 5-20 mm.